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REPORT # 4

SURVEY FINDINGS AND STATUS REPORT

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REPORT # 4

SURVEY FINDINGS AND STATUS REPORT

Submitted to:

Health Planning and Resources Development Bureau
Montana Department of Health and Environmental Sciences
Helena, Montana 59601

Submitted by:

JRB Associates, Inc.
40 Denver Technological Center West
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Englewood, Colorado 80111

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The names of the persons employed or retained by the contractor with managerial or professional responsibility for such work, or for the content of the report, are as follows:

Steven S. Lazarus, Ph.D.
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JRB No. 2-800-02-519-60

Report No. JRB-D-80-01

May 23, 1980

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1.0. INTRODUCTION

1.1. PROJECT SUMMARY

The Department of Health and Environmental Sciences, Department of Institutions, and Department of Social and Rehabilitation Services are working on a Task Force to recommend legislative and budget considerations for the 1982-83 biennium regarding the appropriate investment of state funds towards the necessary support and care of the elderly and mentally handicapped. Some of the services that are considered reasonable alternatives are: homemaker services, adult day care, home health care, meals-on-wheels, personalized nursing care, and sheltered group homes (personal care homes). It is recognized that other innovative mixes of services have been employed to encourage greater independent living by vulnerable people. What is not known is (1) how many people in Montana need assistance to support a relative degree of independence short of institutionalized care, (2) how the people in need distribute among the kinds of care that might be available if appropriate funding were available, and (3) how much these kinds of care cost.

In June, 1979, the Montana Department of Health and Environmental Sciences contracted with JRB Associates, Inc. to conduct a study on the cost of alternatives to nursing home care for the elderly and mentally handicapped. This report is the fourth in a series to be prepared as part of that study. The interpretations of the data presented in this report are preliminary, subject to discussions with the Task Force and additional analyses which may be performed prior to completion of the Final Report. This report was prepared by the Denver JRB office staff.

1.2. REPORT DESCRIPTION

The sections of this report are concerned with various aspects of the survey results and their interpretation. The survey design was presented in Report # 2, Revised on November 5, 1979. Pretest survey results were presented in Report # 3 on December 27, 1979.

The remaining subsections of Section 1 describe the background and results obtained from conducting the survey, from an administrative perspective.

These discussions include: survey response rate, survey item completeness, and survey administration issues. Section 2 presents statewide results from the survey. For the most part, these statewide results are based on a sample size of 1500. Section 3 presents a regional analysis on the appropriate placement in nursing homes and estimates of the number of candidates for alternative care including separate presentations for urban and rural areas. Section 4 includes presentations on the Native American and developmentally disabled sub-populations, as well as technical statistical information.

1.3. JRB SURVEY QUESTIONNAIRE

Appendix A contains the survey questionnaire and instructions utilized for this study. The survey is based on the prior work of Grauer and Birnbom (1975). The instructions are based on instructions supplied by Grauer and Birnbom, the Community Care Organization Project in Wisconsin, and JRB's experience gained during the pretest of 85 surveys.

1.4. SURVEY METHODOLOGY AND ADMINISTRATION

Three population groups aged 65 and over were sampled with the survey instrument. A total sample size of 1500 was proposed as a goal and was achieved. Each sub-population group sample contains 500 respondents. The three population groups are: Medicaid eligibles in nursing homes, Medicaid eligibles not in nursing homes, and non-Medicaid elderly residing in boarding homes. The third group was chosen to represent the non-Medicaid elderly. This group was chosen to represent the non-Medicaid elderly since the population of all HUD-subsidized housing for the elderly is known, which allows for random sampling on a regional basis.

A random cluster sampling approach was utilized for all three population groups. Three hundred respondents were sampled in each of the five State Health Regions. Within each region, 100 respondents were sampled from each of the three groups. The random cluster sampling procedure within each region, was designed to reflect the proportion of elderly living within urban counties within each region. A sequence of counties was selected randomly within each region, reflecting urban and rural sampling requirements. The utilization of counties as clusters preserves the random sampling requirement to present estimates of population statistics at the regional and state level. The cluster

approach saved considerable travel and personnel time expense; or (since the project budget was fixed) allowed for the collection of more surveys than a random sample would have provided. Non-random sampling procedures might have realized a much larger number of surveys completed; however, statistical estimates of population characteristics are invalid under such procedures, unless a census is taken.

This sampling approach has produced a study of unique characteristics. Perhaps the most significant is that pointed out by Dr. Linda Noelker at The Benjamin Rose Institute regarding a rigorous test of the GFRS instrument. One thousand of the respondents to this study form a unique baseline of non-institutionalized, randomly selected community aged who can be followed at one year intervals to validate the predictive ability of the instrument used. Dr. Noelker's comments are presented in Exhibit 1-1. Published "validation" studies have utilized aged who are either institutionalized or are candidates for institutionalization (see Appendix C).

A number of steps were utilized to reasonably ensure the randomness of the sample obtained. Urban counties selected for the study were chosen randomly within Regions 4 and 5 which have multiple urban counties. Up to three survey attempts were made with each respondent, in an attempt to minimize any bias that might result from the non-respondents. Some of the most remote areas of the state were included in the survey. There was no deliberate exclusion of any unique sub-population or geographic area, with the exception of the Boulder, Galen State and Warm Springs State Hospitals. The residents of these two institutions were excluded from the Medicaid nursing home sampling process since they reflect statewide service and therefore their residents could not be described as being representative of regional characteristics.

1.5. SURVEY RESPONSE RATE AND COMPLETENESS

The number of surveys completed for each of the sample groups is presented in Exhibit 1-2. Response rates by sample groups vary from 66 to 97%. JRB held discussions and/or communicated by mail with the Montana Hospital Association, Montana Association for Aging, and the Montana Nursing Home Association in order to achieve maximum cooperation from the nursing home and boarding home administrators. This process was successful in that only two facilities

EXHIBIT 1-1

LETTER FROM DR. LINDA S. NOELKER

The Benjamin Rose Institute
630 Rose Building, Cleveland, Ohio 44115
216/621-7201

Executive Director
Barbara Silverstone, DSW
Associate Directors
Alan C. Beckman, Ph.D
S. Walter Poulshock, Ph.D
Harold E. Redick, CPA

December 19, 1979

Steven S. Lazarus, Ph.D.
Director - Denver Office
40 DTC West
7935 East Prentice Avenue
Englewood, Colorado 80111

Dear Dr. Lazarus:

Enclosed are two papers which we have presented on the issue of institutionalization of the aged and the use of Grauer and Birnbom's DFRS as a placement indicator. I have not seen a rigorous test of this instrument reported anywhere in the literature. That is, a study has not been conducted in which a population or random sample of community aged were surveyed with this instrument and then followed up for at least one year in order to assess the instrument's predictive validity. In our study we included only aged clients of the Institute who were recommended for placement compared with a sub-group of clients who received only home aide service.

To discover if any futher testing of the DFRS has been carried out, I suggest you contact the following person:

Mr. David Mangen
1114 Social Science Tower - Sociology
University of Minnesota
Minneapolis, Minnesota 55455

(612) 376-7178

He is responsible for a project which has compiled all instruments used in aging research as well as critiques of these instruments. The DFRS is included among them. I hope this material and information is helpful to you. If you have any additional requests, do not hesitate to call upon me.

Sincerely,

Linda S. Noelker, Ph.D.
Senior Research Associate

LSN:ne
Encl.

EXHIBIT 1-2

SURVEYS COMPLETED BY SAMPLE GROUP

SAMPLE POPULATION	NUMBER ATTEMPTED	NUMBER RESPONDING	PERCENTAGE RESPONDING
Medicaid, Nursing Home	513	500	97.5%
Medicaid, Non-Nursing Home	756	500	66.1%
Non-Medicaid, Non-Nursing Home	560	500	89.3%
TOTAL	1829	1500	82.0%

refused to participate, Park Place Nursing Home in Great Falls and Hearthstone, Inc. in Anaconda. In several other cases, individuals closely followed the JRB surveyors within the institution; however, although this was annoying and somewhat disruptive, it did not substantially interfere with the survey process.

The survey item completeness was very high. Exhibit 1-3 presents survey item completeness for the primary questions. The item numbers refer to the survey items which are fully described in Appendix A. All survey questions which normally would have been answered by all respondents have a response rate of at least 97.5%. Per cent completed statistics are all based on 1500 surveys; however, in many cases the proportion of the sample for whom the response is inapplicable is significant.

1.6. SIGNIFICANT ADMINISTRATIVE ISSUES

Montana Department of Social and Rehabilitation Services was very cooperative in supplying the lists of Medicaid recipients. At times, staff were under great pressure to produce these materials in time for the study to proceed. Many minor problems were encountered; however, these materials were prepared and delivered in a timely manner which allowed the study to proceed, an accomplishment which JRB has not always found achievable by Medicaid programs in other states.

JRB surveyors experienced some difficulty in finding Medicaid recipients with post office box addresses. Lack of frequent airplane services and a shortage of motel space (due to the increase in activity related to the development of the Williston Basin) in Eastern Montana required that thorough advance planning be utilized to efficiently conduct surveying in this Region. Weather throughout the winter was relatively cooperative, with major storms primarily occuring while JRB personnel were in Denver preparing for future surveying trips. In only one instance a flight was cancelled because of bad weather.

In Lewistown, Montana a JRB surveyor was sought by the local police for three days due to a complaint lodged by either a respondent or a non-respondent When eventually apprehended for questioning, the JRB surveyor was able to adequately explain his presence with the help of the identification card provided by the Department of Health and Environmental Sciences. However, this experience was disruptive to completing surveys in the facility where he was apprehended.

EXHIBIT 1-3

SURVEY ITEM COMPLETION*

SURVEY ITEM	NUMBER OF SURVEY ITEMS COMPLETED	NUMBER INAPPLICABLE	NUMBER NO ANSWER	PERCENT COMPLETED
GFRS SCORE	1500	0	0	100
31. Sex	1500	0	0	100
32. Age	1484	0	16	98.9
33. Type Residence	1500	0	0	100
34. Race	1496	0	4	99.7
35. Income Level	1474	0	26	98.3
36. Children in County	1462	0	38	97.5
37. Financial Support	645	688	167	43.0
38. Own Car	1497	0	3	99.8
39. Private Insurance	1475	0	25	98.3
40. Cover Home Care	428	1052	20	28.5
41. NH Placement Chosen	479	1000	21	31.9
42. Financial Status Stable	52	1447	1	3.5
43. Sell Possessions	52	1447	1	3.5
44. Duration Independence	45	1447	8	3.0

*Includes only survey responses, non-responses excluded
Percent completed based on 1500 surveys

Subsequent to this event, local police departments were notified of JRB personnel surveying activities prior to their commencement.

Respondents to the survey can be hostile. In one instance, an interviewer was chased by a lady with a kitchen knife when she answered his knock at the door. Bystanders can also be unfriendly. An interviewer was accosted by a young adolescent with a knife when he tried to conduct interviews on the "wrong side of town" and on another occasion he was "crowded" by a group of young Native Americans asking for money.

Although severe weather problems did not seriously hinder the conduct of this survey during the winter, problems were encountered. One interviewer suffered a mild "post impact trauma" after falling on ice in a parking lot. This fall resulted in periodic dizziness for about one week. In general, it is preferable to conduct statewide studies in the summer months when the weather is more favorable.

Interviewers need to be capable of confronting and handling the emotional issues faced when conducting surveys of the elderly. In several cases, respondents were experiencing emotional trauma and needed to talk to someone. Interviewers must have the capability to draw a line between being dedicated to completing their work and being compassionate. In some cases, residential units were literally uninhabitable, necessitating great courage merely to enter and sit down to conduct the interview.

A relatively short survey instrument was designed for this study. This decision proved to be a wise one. The survey response rate is high as is the item completeness rate. These statistics are frequently much lower for lengthy survey instruments. In addition, there have been several significant air fare increases between the time that the project was proposed and the survey activity was completed. By being able to administer the survey instrument efficiently and planning travel according to the cluster pattern of the random sample, the impact of the increased air fare costs was minimized. In addition, on several occasions the surveyors worked ten days straight in Montana and took four days off, thus saving several round trip air fares between Denver and Montana.

In summary, the survey process went very well, primarily due to good administrative and efficiency planning. Most of the problems encountered could

not have been overcome by better planning, with the single exception of conducting the survey during a warmer season.

1.7. INTERPRETATION OF SURVEY RESULTS

The remaining sections of this report contain several tables reporting results of the survey. There are two important factors to keep in mind when interpreting these tables. First, all of the percentage estimates are single point estimates. Exhibit 1-4 presents the interval ranges around these percentages as a function of sample size. For example, if the survey shows that in Region 1 2% of the nursing home population has independent functional ability, then the 90% confidence interval around that 2% is approximately plus or minus 5%. In other words, at this confidence level, the percentage could be as high as 7% or as low as 0. At the state level sample of 1500 the same level of confidence is achieved with plus or minus 1%. All of these estimates are approximate and will vary somewhat based upon the specific percentage under consideration. In addition, it must be recalled that the survey instrument is not perfect and therefore relatively small percentages (in the 2 to 5 range) may not be significant.

Several of the statistical tables in Sections 2 and 3 contain separate presentations for urban and rural areas. For the purposes of this study, seven Montana counties were defined as urban. They are listed in Exhbit 1-5 based upon an estimated 3,000 or more elderly residents within the county.

EXHIBIT 1-4

APPROXIMATE CONFIDENCE INTERVALS

Sample Size, n	p, Population Proportion	90% Confidence Interval of p
100	0.1	0.05 to 0.15
300	0.1	0.07 to 0.13
1500	0.1	0.09 to 0.11

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EXHIBIT 1-5

MONTANA COUNTIES WITH MORE THAN 3,000 ELDERLY

	Region	County	Major City
1.	Eastern	None	
2.	North Central	Cascade	Great Falls
3.	South Central	Yellowstone	Billings
4.	Southwestern	Gallatin	Bozeman
		Lewis & Clark	Helena
		Silver Bow	Butte
5.	Northwestern	Flathead	Kalispell
		Missoula	Missoula

2.0. STATE LEVEL SURVEY RESULTS

A total of 1500 surveys were completed for state level analysis. Appendix B contains 1975 and 1985 population projections for each Region. 1980 estimates utilized in this study are based on averaging the 1975 and the 1985 projections. Exhibits 2-1 and 2-2 present estimates of the Montana Medicaid over 65 nursing home population and non-nursing home population respectively. The data in these tables are based on January, 1980 eligibility information. For the Medicaid nursing home population, the sample has 18% under the age of 75 compared with 20% for the population. The Medicaid nursing home sample is 75% female compared with 71% female for the population.

The Medicaid at home sample is 47% aged under 75 compared with 50% for the population. Sixty-six per cent of the Medicaid at home population is female compared with 73% surveyed in this category. There is no reason to believe that these small differences in anyway bias the interpretation of the survey results.

Exhibit 2-3 presents statewide results by survey item. These results are based upon 1500 surveys and include both nursing home and non-nursing home respondents. The average GFRS score is 31.64 which means that the average respondent needs alternative care. Seventy per cent of the population surveyed have incomes below $2500 per year. Twenty-nine per cent have private health insurance and 42% per cent of these policies include home care benefits.

Exhibit 2-4 presents the percentage distribution of GFRS scores by age group for the entire state. It is particularly significant to note the results in the column "Less than 20" which related to appropriate placement in a nursing home. As the elderly get older, the proportion requiring nursing home placement grows significantly. It is important to remember when interpreting Exhibits 2-3 through 2-5, these are survey statistics which are not adjusted for the proportions of the population that are Medicaid nursing home, Medicaid at home, and non-Medicaid.

Exhibit 2-5 describes the relationship of GFRS to age for the entire state. The GFRS score of 20 is significant in that it is below this score where institutional placement is indicated. There is a relative stability in

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EXHIBIT 2-1

MONTANA MEDICAID OVER 65
NURSING HOME POPULATION BY REGION
AND SEX

Region	TOTAL		AGED 65-74		AGED 75+	
	Number	% Female	Number	% Female	Number	% Female
1	284	63%	61	44%	223	68%
2	632	69%	124	60%	508	71%
3	707	69%	132	52%	575	73%
4	790	75%	185	65%	605	78%
5	647	72%	100	68%	547	73%
State Total:	3060	71%	602	60%	2458	74%

EXHIBIT 2-2

MONTANA MEDICAID OVER 65
NON-NURSING HOME POPULATION BY REGION
AND SEX

Region	TOTAL		AGED 65-74		AGED 75+	
	Number	% Female	Number	% Female	Number	% Female
1	358	64%	168	64%	190	65%
2	859	62%	457	57%	402	68%
3	748	62%	399	62%	349	63%
4	657	72%	326	65%	331	78%
5	772	69%	367	65%	405	72%
State Total:	3394	66%	1717	62%	1677	69%

EXHIBIT 2-3

STATEWIDE RESULTS BY SURVEY ITEM

ITEM	STATISTIC	VALUE
GFRS Score	mean	31.64
% Medicaid Recipients	percentage	66.6%
% Female	percentage	74.8%
% Nursing Home Residents	percentage	33.3%
% White	percentage	97.3%
% Below $2500 Income	percentage	70.1%
% With Children in County	percentage	52.9%
% responding that children would need more than $500/yr to support them in child's home	percentage	51.2%
% Own, Use car	percentage	15.0%
Private Health Insurance	percentage	28.7%
% with private health insurance covering home care	percentage	1.7%
% Financially Independent	percentage	3.2%
% Stable	percentage	18.8%
% Selling Possessions to stay independent	percentage	16.6%
% "Permanent"	percentage	89.6%
Nursing Home Residents		
% Medically Placed	percentage	79.1%

EXHIBIT 2-4

PERCENTAGE OF GFRS SCORES BY AGE GROUPS, STATE OF MONTANA

Sample size, n = 1484

Age Group	GFRS		
	Less than 20	20-39	40 and above
65-74	15.4%	15.7%	68.9%
75-84	26.0%	13.1%	61.0%
85-95	48.3%	17.2%	34.5%
95-105	73.1%	19.2%	7.7%

EXHIBIT 2-5

RELATIONSHIP OF GFRS TO AGE, STATE OF MONTANA

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the elderly population's functional ability through approximately age 80. Between age 80 and 85, there is a decline in functional ability, and beyond age 86 a significant portion of the elderly population require institutional care.

Montana GFRS scores for the three population groups, for rural and urban areas, are presented in Exhibit 2-6. The most striking differences between the urban and rural areas are reflected in the Medicaid and nursing home scores, where there appears to be a higher tendency to use nursing homes in rural areas, probably because of reduced opportunity for alternative care in rural communities. Exhibit 2-7 presents average GFRS scores by status and region. A few observations in this Exhibit are noteworthy. First, the relatively low GFRS scores for Medicaid recipients in nursing homes in Regions 2 and 5 indicate lower functional abilities of the nursing home residents in these two regions (perhaps an indicator of more appropriate placement in nursing homes). The relatively high GFRS scores in Region 5 of the two populations at home indicate an appropriate dichotomy between the institutionalized and non-institutionalized elderly in this Region. The relatively low scores for the two populations at home in Region 2 perhaps indicate a larger need for alternative programs since a significant portion of the population at home in this Region would have scores below 40.

Exhibit 2-8 presents a summarized statistical analysis of those variables which relate most significantly to GFRS. The presentation is divided into two sample groups, nursing home with a sample size of 500 and residents at home with a sample size of 1,000. A minus sign preceding the correlation coefficient indicates a negative relationship, which is true for age which is expected. For the nursing home sample, a correlation coefficient of absolute value exceeding 0.115 is significant at the 1% level. For the residing at home sample of 1,000, a correlation coefficient of absolute value exceeding 0.081 is significant at the 1% level. Based on the results from the residing at home sample, further study is warranted to investigate the following variables to possibly develop a predicting formula to prescreen GFRS administration: age, sex, use car, use telephone, private health insurance, and income.

EXHIBIT 2-6

STATE OF MONTANA GFRS SCORES

TABLE a. RURAL (n = 828)

STATUS	GFRS		
	Less Than 20	20-39	40 and above
Not Medicaid	3%	14%	83%
Medicaid at Home	7%	13%	80%
Medicaid in Nursing Home	78%	19%	3%

TABLE b. URBAN (n = 672)

STATUS	GFRS		
	Less Than 20	20-39	40 and above
Not Medicaid	5%	14%	81%
Medicaid at Home	2%	17%	81%
Medicaid in Nursing Home	86%	12%	2%

EXHIBIT 2-7

GFRS AVERAGE SCORE BY STATUS AND REGION

Region	STATUS		
	Not Medicaid	Medicaid at Home	Medicaid in Nursing Home
1	57.53	49.74	- 5.13
2	46.74	42.27	-14.70
3	50.98	52.68	- 3.09
4	53.76	49.19	- 6.03
5	56.83	55.64	-12.10
State of Montana	53.17	49.90	- 8.21

EXHIBIT 2-8

GFRS STATISTICAL STATEWIDE CORRELATIONS

Variable	GFRS CORRELATION COEFFICIENT: Nursing Home Sample, n = 500	GFRS CORRELATION COEFFICIENT: Residing at Home Sample, n = 1000
Age	-0.206	-0.199
Sex (1=male)	0.167	-0.098
Urban County (1=Urban)	-0.121	0.069
Use Car	0.104	0.211
Use Telephone	0.097	0.260
Insurance	0.037	0.187
Income	*	0.161

*Cannot be computed

NOTES: For a sample size of 500, a correlation coefficient of $|0.115|$ or larger is significant at the 1% level.

For a sample size of 1000, a correlation coefficient of $|0.081|$ or larger is significient at the 1% level.

3.0. SURVEY DATA ANALYSIS BY REGION

The series of Exhibits in this Section are organized by Region. The first Exhibit for each Region presents the percentage distribution of GFRS score by status. It is important to note that GFRS scores of less than 20 generally indicate institutionalization, scores between 20 and 39 indicate a support requirement (alternative to insitutionalization), and scores of 40 and above indicate functional independence. The analysis for each Region is conducted separately for rural and urban areas, with the exception of Region 1 which has no urban area.

Exhibits 3-3 through 3-5 will be used for illustrative purposes to explain the information presented for each Region. Exhibit 3-3 depicts the status and GFRS relationship for the rural and urban areas of Region 2. As is expected, relatively small percentages of the non-Medicaid and Medicaid at home populations have scores of less than 20 which would indicate institutionalization. Also, relatively small percentages of residents in nursing homes have scores above 40 which indicate independent functional ability. In this Region and several others, significant proportions of the institutionalized and non-institutionalized populations have scores ranging from 20 to 39 which predict the utilization of an alternative to nursing home care. The GFRS scores are predictive in nature, and therefore some discrepancies of placement versus GFRS score are expected. It is also important to note that a person residing in a nursing home may have been appropriately placed in the nursing home at time of admission and at the time of survey may have been able to utilize an alternative or return to independent living, but these alternatives may not be available. In interpreting the first Exhibit for each Region, attention should be focused on the percentage of each category with scores ranging from 20 to 39, the range in which alternatives to nursing home care apply.

The second set of presentations for each Region consists of one or two estimates of channeling alternative candidates. The channeling alternative to nursing home care is presented for discussion purposes here, since day care programs are very expensive and require large service loads to be potentially

efficient. It is unlikely that these large service loads will materialize in Montana in most communities.

Exhibit 3-4 presents the estimates of alternative care candidates for the rural area of Region 2. Both a high estimate and low estimate are presented. The high estimate calculation for Medicaid recipients in nursing homes who would be eligible for the alternative is performed by multiplying the number of Mediciad recipients in nursing homes in the rural part of Region 2 by the percentage of surveyed Medicaid recipients in nursing homes in the rural part of Region 2 who scored 20 and above on the GFRS (this information is obtained from Exhibit 3-3, table a). The result is 49 nursing home residents who could be displaced from nursing homes if suitable alternatives and the administrative mechanisms are available. The low estimate for Medicaid recipients in nursing homes is 0. This estimate is utilized based on JRB's discussion with ACCESS personnel in Rochester, New York who indicated that almost no alternative to long term care program clients come to the program from nursing homes. However, the program is very successful in providing an alternative to some who are seeking nursing home placement. The second calculation of estimating channeling candidates is performed for the Medicaid at home recipients. The number of Medicaid at home residents in the rural part of Region 2 (485) is multiplied by the percentage of surveyed respondents in this category in the rural counties of Region 2 who have GFRS scores of less than 40. The high estimate yields 32% in this category for a total number of 155. The low estimate takes the same population base of 485 and multiplies it by one-half of the percentage of the sample in this status category who have GFRS scores ranging from 20 to 39. This yields 63 candidates. This more conservative approach is taken by addressing only those who have scores which indicate the use of the alternative and assumes that only half of them would participate in an alternative program. The other half might go into nursing homes or might continue to live in the present arrangement with or without support from family and friends.

The non-Medicaid population for the rural area of Region 2 is calculated by averaging the 65 and over population estimates for the rural counties in Region 2 (see Appendix B) and then subtracting the Medicaid recipients at home and in nursing homes from the same geographic area. This results in 6022 as the population base for this category. No adjustment was made for non-Medicaid

recipients in nursing homes, but it is believed that this is a relatively small proportion of all non-Medicaid recipients living in the geographic area. The high estimate for this Region is based on multiplying this population estimate by the percentage of the respondents in this category who have GFRS scores less than 40. The low estimate is calculated by multiplying this population by one-half the percentage of the respondents in this category who have GFRS scores ranging from 20 to 39. The resulting high and low estimates for this geographic area are 1890 and 786 respectively.

The high and low estimates of the number of candidates for alternatives to nursing home care is presented in this Section for nine geographic regions. Each region has at least 364 (low estimate) candidates for alternative programs. Similar calculations can be performed for subsets of the geographical entities identified in this Section. Each geographic area analyzed in this Section has a sample size of at least 117. This study was designed to be able to make these types of projections at the state and regional level. Projections at the county or sub-regional level may or may not be appropriate, depending upon the characteristics of the population and the geographic base of the sample utilized.

EXHIBIT 3-1

REGION 1 - STATUS AND GFRS SCORE

Table a. RURAL (n = 300)

STATUS	GFRS		
	Less than 20	20-39	40 and above
Not Medicaid	2%	9%	89%
Medicaid at Home	7%	8%	85%
Medicaid in Nursing Home	80%	16%	4%

EXHIBIT 3-2

REGION 1 - ESTIMATE OF RURAL AREA CHANNELING CANDIDATES

	High Estimate	Low Estimate
Medicaid in Nursing Home % GFRS 20+	284 x 20 = 57	0
Medicaid at Home % GFRS Less than 40	353 x 15 = 53	353 x ½% GFRS 20-39, 4 = 14
Non-Medicaid % GFRS Less than 40	10508 x 11 = 1156	10508 x ½% GFRS 20-39, 4.5 = 473
Total Estimate:	1266	487

EXHIBIT 3-3

REGION 2 - STATUS AND GFRS SCORE

TABLE a. RURAL (n = 141)

STATUS	GFRS		
	Less Than 20	20-39	40 and above
Not Medicaid	4%	24%	72%
Medicaid at Home	6%	26%	68%
Medicaid in Nursing Home	83%	15%	2%

TABLE b. URBAN (n = 159)

STATUS	GFRS		
	Less Than 20	20-39	40 and above
Not Medicaid	8%	21%	72%
Medicaid at Home	4%	36%	60%
Medicaid in Nursing Home	89%	11%	0%

EXHIBIT 3-4

REGION 2 - ESTIMATE OF RURAL AREA CHANNELING CANDIDATES

	High Estimate	Low Estimate
Medicaid in Nursing Home % GFRS 20+	289 x 17% = 49	0
Medicaid at Home % GFRS Less than 40	485 x 32% = 155	485 x ½% GFRS 20-39, 13 = 63
Non-Medicaid % GFRS Less than 40	6022 x 28% = 1686	6022 x ½% GFRS 20-39, 12 = 723
Total Estimate:	1890	786

EXHIBIT 3-5

REGION 2 - ESTIMATE OF URBAN AREA CHANNELING CANDIDATES

	High Estimate	Low Estimate
Medicaid in Nursing Home % GFRS 20+	343 x 11% = 38	0
Medicaid at Home % GFRS Less than 40	374 x 40% = 150	374 x ½% GFRS 20-39, 18% = 67
Non-Medicaid % GFRS Less than 40	6758 x 29% = 1960	6758 x ½% GFRS 20-39, 10.5% = 710
Total Estimate:	2148	777

EXHIBIT 3-6

REGION 3 - STATUS AND GFRS SCORE

TABLE a. RURAL (n = 138)

STATUS	GFRS		
	Less Than 20	20-39	40 and above
Not Medicaid	6%	20%	74%
Medicaid at Home	11%	11%	78%
Medicaid in Nursing Home	63%	35%	2%

TABLE b. URBAN (n = 162)

STATUS	GFRS		
	Less Than 20	20-39	40 and above
Not Medicaid	2%	11%	87%
Medicaid at Home	2%	7%	91%
Medicaid in Nursing Home	81%	17%	2%

EXHIBIT 3-7

REGION 3 - ESTIMATE OF RURAL AREA CHANNELING CANDIDATES

	High Estimate	Low Estimate
Medicaid in Nursing Home % GFRS 20+	344 x 37 = 127	0
Medicaid at Home % GFRS Less than 40	347 x 22 = 76	347 x ½% GFRS 20-39, 5.5 = 19
Non-Medicaid % GFRS Less than 40	6443 x 26 = 1675	6443 x ½% GFRS 20-39, 10 = 644
Total Estimate:	1878	663

EXHIBIT 3-8

REGION 3 - ESTIMATE OF URBAN AREA CHANNELING CANDIDATES

	High Estimate	Low Estimate
Medicaid in Nursing Home % GFRS 20+	363 x 19 = 69	0
Medicaid at Home % GFRS Less than 40	401 x 9 = 36	401 x ½% GFRS 20-39, 3.5 = 14
Non-Medicaid % GFRS Less than 40	8547 x 13 = 1111	8547 x ½% GFRS 20-39, 5.5 = 470
Total Estimate:	1216	484

EXHIBIT 3-9

REGION 4 - STATUS AND GFRS SCORE

TABLE a. RURAL (n = 117)

STATUS	GFRS		
	Less Than 20	20-39	40 and above
Not Medicaid	0%	10%	90%
Medicaid at Home	3%	20%	77%
Medicaid in Nursing Home	77%	20%	3%

TABLE b. URBAN (n = 183)

STATUS	GFRS		
	Less Than 20	20-39	40 and above
Not Medicaid	8%	18%	74%
Medicaid at Home	2%	15%	84%
Medicaid in Nursing Home	90%	8%	2%

EXHIBIT 3-10

REGION 4 - ESTIMATE OF RURAL AREA CHANNELING CANDIDATES

	High Estimate			Low Estimate		
Medicaid in Nursing Homes % GFRS 20+	163 x 23	=	37			0
Medicaid at Home % GFRS Less than 40	130 x 23	=	30	130 x ½% GFRS 20-39, 10	=	13
Non-Medicaid % GFRS Less than 40	7682 x 10	=	768	7682 x ½% GFRS 20-39, 5	=	384
Total Estimate:			835			397

EXHIBIT 3-11

REGION 4 - ESTIMATE OF URBAN AREA CHANNELING CANDIDATES

	High Estimate		Low Estimate	
Medicaid in Nursing Home % GFRS 20+	129 x 18 =	23		0
Medicaid at Home % GFRS Less than 40	103 x 11 =	11	103 x ½% GFRS 20-39, 4.5 =	5
Non-Medicaid % GFRS Less than 40	11,281 x 7 =	790	11,281 x ½% GFRS 20-39, 3.5 =	395
Total Estimate:		824		400

EXHIBIT 3-12

REGION 5 - STATUS AND GFRS SCORE

TABLE a. RURAL (n = 132)

STATUS	GFRS		
	Less Than 20	20-39	40 and above
Not Medicaid	4%	14%	82%
Medicaid at Home	5%	9%	86%
Medicaid in Nursing Home	86%	14%	0%

TABLE b. URBAN (n = 168)

STATUS	GFRS		
	Less Than 20	20-39	40 and above
Not Medicaid	0%	7%	93%
Medicaid at Home	2%	9%	89%
Medicaid in Nursing Home	82%	14%	4%

EXHIBIT 3-13

REGION 5 - ESTIMATE OF RURAL AREA CHANNELING CANDIDATES

	High Estimate	Low Estimate
Medicaid in Nursing Home % GFRS 20+	253 x 14 = 35	0
Medicaid at Home % GFRS Less than 40	343 x 14 = 48	343 x ½% GFRS 20-39, 4.5 = 15
Non-Medicaid % GFRS Less than 40	7342 x 28 = 1322	7342 ½% GFRS 20-39, 7 = 514
Total Estimate:	1405	529

EXHIBIT 3-14

REGION 5 - ESTIMATE OF URBAN AREA CHANNELING CANDIDATES

	High Estimate			Low Estimate		
Medicaid in Nursing Homes % GFRS 20+	394 x 18	=	71			0
Medicaid at Home % GFRS Less than 40	429 x 11	=	47	429 x ½% GFRS 20-39, 4.5	=	19
Non-Medicaid % GFRS Less than 40	9854 x 7	=	690	9854 x ½% GFRS 20-39, 3.5	=	345
Total Estimate:			808			364

4.0. SPECIAL ANALYSES

4.1. SURVEY ITEMS STATISTICS.

Exhibit 4-1 presents the mean and standard deviation for several variables collected with the survey instrument. Of particular note is the GFRS score variable, which has a mean of 31.56 and a standard deviation of 35.0. It is significant that the mean falls within the range of the middle scale of importance (20-39) and that the standard deviation is large. A useful predictive instrument of this type should have a relatively wide dispersion of responses from a sampled population and the distribution of scores should be somewhat centered around the middle of the range of interest. The GFRS appears to perform well on both of these parameters. The statistics for survey items 33-44 are best interpreted by referring to the survey questionnaire in Appendix A.

4.2. RESULTS FOR NATIVE AMERICANS

Thirty Native Americans were surveyed as part of this study. This number is too small to be considered representative of the Native American elderly in Montana. GFRS score distribution by age group for this sample of 30 is presented in Exhibit 4-2.

4.3. RESULTS FOR DEVELOPMENTALLY DISABLED

Thirty developmentally disabled were surveyed as part of this study. This number is too small to be considered representative of the developmentally disabled in Montana. GFRS score distribution by age group for this sample of 30 is presented in Exhibit 4-3. Twenty-three of the 30 developmentally disabled in the sample are in the age group 65-74, a finding which differs significantly from the general elderly population.

EXHIBIT 4-1

SURVEY ITEM STATISTICS

SURVEY ITEM	NUMBER OF VALID OBSERVATIONS	MEAN	STANDARD DEVIATION
GFRS SCORE	1500	31.56	35.00
P.O. Box Number (1=yes)	1500	0.03	0.16
Phone Number (1=yes)	1500	0.58	0.49
Urban County (1=yes)	1500	0.45	0.50
31. Sex (1=male)	1500	0.25	0.43
32. Age	1484	79.41	7.98
33. Type of Residence	1500	2.87	1.05
34. Race	1496	1.04	0.22
35. Income	1474	1.34	0.56
36. Children in County	1462	0.53	0.50
37. Financial Support for Housing	812	1.08	0.60
38. Own and Use Car	1497	0.15	0.36
39. Private Health Insurance	1475	0.29	0.45
40. Insurance for Home Care	447	~~0.42~~ 1.92	~~1.86~~ 0.12
41. Reason for Nursing Home	501	2.12	1.53
42. Financial Status Stability	53	0.34	1.27
43. Sold Possessions	53	0.32	1.27
44. Duration of Independence	53	~~3.83~~ 2.91	~~2.23~~ 0.42

NOTE: Refer to Survey in Appendix A for Survey item question and response details.

EXHIBIT 4-2

GFRS SCORES FOR NATIVE AMERICANS BY AGE, STATE OF MONTANA

Sample size, n = 30

Age Group	n	Less than 20	20-39	40 and above
65-74	13	7.7%	7.7%	84.6%
75-84	15	20.0%	20.0%	60.0%
85-94	2	0	50.0%	50.0%
TOTAL	30	13.3%	16.7%	70.0%

EXHIBIT 4-3

GFRS SCORES FOR DEVELOPMENTALLY DISABLED BY AGE, STATE OF MONTANA

Sample size, n = 30

Age Group	n	Less than 20	20-39	40 and above
65-74	23	52.2%	21.7%	26.1%
75-84	5	60.0%	20.0%	20.0%
85-94	2	100.0%	0	0
TOTAL	30	56.7%	20.0%	23.3%

APPENDIX A

JRB SURVEY AND INSTRUCTIONS

QUESTIONNAIRE #: __ - __ __ - __ __ __

SURVEYOR: _____

DATE OF INTERVIEW _____

ATTEMPTED INTERVIEWS:	Date Completed	Not Completed
1st _____	☐	☐
2nd _____	☐	☐
3rd _____	☐	☐

NURSING HOME: ☐

MEDICAID I.D. # _____

Name: _____

Address: _____

_____

_____ zip _____

Telephone #: 406 - _____

Geriatric Functional Rating Scale: © 1975 GRAUER and BIRNBOM

JRB ASSOCIATES, INC. granted permission to use Geriatric Functional Rating Scale, August 17, 1979, by H. Grauer, M.D., for use in this questionnaire (page 2).

31. Sex: _____ 32. Age _____ 33. Type of Residence _____

34. Race: _____
1. White
2. Native American
3. Other

1. Private Home
2. Apartment
3. Boarding Type Home
4. Institution

35. Income Level: _____

1. Below $2500
2. $2500-$7500
3. Above $7500

36. Does respondent have children, with whom he gets along, living in the same county? _____ (yes = 1, no = 0)

If 36 is "yes":

37. How much annual financial support does respondent think children would need to successfully house respondent? _____

1. $0 - $300
2. $300 - $500
3. $500 +

38. Does person currently: own a car, have a valid driver's license, and use the car for transportation? _____ (yes = 1, no = 0)

39. Does respondent have private health insurance? _____ (yes = 1, no = 0)

If 39 is "yes":

40. Does policy cover assistant/home care? _____ (yes = 1, no = 0)

* * (ASK ONLY NURSING HOME RESIDENTS) * *

41. Why was nursing home placement chosen? (ONE "BEST" ANSWER) _____

1. Social: (e.g., family urging)
2. Medical: (e.g., appropriate level or not)
3. Financial: (couldn't afford living and care elsewhere).

* * * (ASK THIS IN CONJUNCTION WITH NUMBERS 28-30, * * * GRF, ONLY IF RESPONDENT INDICATES FINANCIAL INDEPENDENCE)

42. Is financial status stable or changing? _____ (changing = 1, stable = 0)

43. Have you had to. or will you have to, sell possessions to maintain independence? _____ (yes = 1, no = 0)

44. Can respondent estimate duration of independence: _____

1. 0 - 1 year
2. 1 - 5 years
3. Permanent

-continued-

Functional Rating Scale

© 1975 GRAUER and BIRNBOM

I Circle the appropriate score value for each area

PHYSICAL CONDITION						
1. Eyesight	Watches TV Reads Needlework	0	Distinguishes faces	-3	Sees light only	-10
2. Hearing	Normal voice	0	Loud voice	-3	Deaf	-5
3. Mobility	Fully mobile Dresses Carries Parcels Rides bus	0	Uses cane or should use one Dependent on railings	-3	Requires cane & other support Wheelchair	-15
4. Pulmo-Cardio Vascular Function	No restrictions	0	1 flight of stairs 1 city block	-3	Partly or totally bed-ridden	-20
5. Diet	No restrictions	0			Yes	-3
MENTAL CONDITION						
6. Disorientation	None	0	Time	-3	Person & Place	-15
7. Delusions	None	0	Mild-severe Suspiciousness	-3	Overt	-10
8. Memory loss	None	0	Benign	-3	Malignant	-20
9. Energy & Drive	Normal	0			Hypoactive or Hyperactive	-5
10. Judgment	Intact	0			Impaired	-5
11. Hallucinations	None	0			Auditory-visual	-10

II Circle the score value only when the answer is YES in each area

FUNCTIONAL ABILITIES	
12. Reads and writes letters	-2
13. Able to use telephone	-5
14. Able to bank and shop	-5
15. Able to prepare simple meals and bake	-7
16. Washes, dresses and toilets self without assistance	-5
17. Uses public transportation	-7
18. Able or would be able to take own medication and follow diet	-10
SUPPORT FROM THE COMMUNITY	
19. Ethnic compatibility in neighborhood or residential area	-2
20. If living alone, can get support and help from a relative, friend, neighbor, or janitor	-10
21. Able to shop at reliable grocer's (willing to deliver when necessary)	-5
22. Availability and accessibility of supportive and recreational facilities -	
- Clubs (i.e. senior citizen center, etc.)	-2
- Church, synagogue	-1
- Library	-1
- Park, shopping center, restaurant, movies	-1
23. Geographic availability and accessibility of -	
- Public Health Nurses	-2
- Meals-On-Wheels Service	-2
- Homemaker Services	-2
- Friendly Visitors	-2
- Hospital with emergency and clinic facilities	-2
- Public transportation	-2
LIVING QUARTERS	
24. Elevator service or living on ground floor or basement	-3
RELATIVES AND FRIENDS	
25. Not married but lives with compatible and helpful relative or friend	-5
26. Lives with incompatible relative, friend or spouse	0
27. Lives with able and compatible spouse	-10
FINANCIAL SITUATION	
28. Totally independent	-5
29. Dependent on helpful relative	-3
30. Dependent mainly on Social Security S.S.I. or other community resources	0

Please check to make sure that this form has been reviewed and completed. You may make additional comments on the reverse side.

INSTRUCTIONS FOR COMPLETING THE MONTANA ELDERLY NEEDS ASSESSMENT SURVEY, INCLUDING THE GERIATRIC FUNCTIONAL RATING SCALE

Prepared by

JRB ASSOCIATES, INC.
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7935 East Prentice Avenue
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(303) 773-6883

January 24, 1980

The purpose of this needs assessment survey is to facilitate a brief but wholistic evaluation of a person's ability to cope on an everyday basis within the surrounding community. It enables the interviewer to balance the respondents' physical and mental status with the respondents' functional abilities and the resources present (or not present) within the surrounding community that could compensate for any disabilities.

Administrative Procedure

1. The face sheet of the questionnaire is completed during the first interview attempt to enable the interviewer to find the respondent again, and to avoid duplication. It can also be used as an initial check on the respondent's mental status.

2. Items 31-41 on page one are completed first. Items 42-44 are completed in conjunction with items 28-30 on the Geriatric Functional Rating Scale, if applicable. This process gives the interviewer clues concerning the mental status of the respondent.

3. The Geriatric Functional Rating Scale is completed next, on the basis of the respondent's answers to questions and the interviewer's observations. The respondent receives one score each for items 1-11; items 12-30 are scored only as applicable in each specific instance. For Items 1-11, varying degrees of disability are reflected by negative scores.

Rating Scale Procedures

1. Complete all information on the top half of the page by completing the blank spaces with the appropriate response.

2. Beginning under CLIENT PHYSICAL CONDITION, for items 1 to 11, circle one score for each.

3. On all remaining items, 12 to 30, circle only those scores which are applicable.

Specific Instructions, Definitions and Criteria

Items 1-5 (Physical Condition)

Item 3 - Mobility

Disability (negative score) on this item reflects immobility due to muscular or skeletal conditions rather than cardiac - or pulmonary - specific conditions (See Item 4). Impairment is usually due to osteo-arthritis or muscular weakness or spasm secondary to a stroke.

Item 4 - Pulmo-Cardiovascular Function

A negative score on this item reflects immobility due specifically to cardiac or pulmonary condition. If cardiac and/or pulmonary function prevents a person from climbing more than one flight of stairs or from walking more than one city block - Score -3.

While there may be some overlap between these areas, only one extreme negative score is given. Thus, if a respondent is at least partly bedridden (including confinement to a wheelchair when not in bed per se) it must be discerned if this is due primarily to Item 3 or Item 4: if Item 3, a -15 is scored; if Item 4, a -20 is scored--not both.

Items 6-11 (Mental Condition)

These factors are assessable through general conversation; e.g., asking the person how old he/she is, how long he/she has lived where he/she is, where he/she lived prior to that, how he/she likes the neighborhood, weather, and so on.

Item 6 - Disorientation

Score -3 if a person is disoriented to one or more of the following: time of day; day, week, month or year.

Score -15 if the person seems unaware of where he/she is or who he/she is.

Item 7 - Delusions

Try to ascertain:

(a) Whether he/she feels (unrealistically) that some people or institutions are against him/her;

(b) Whether neighbors are (unrealistically) particularly nasty and/or if he/she thinks they are taking things from him/her;

(c) Whether he/she has unwarranted influence over others or is influenced in an unrealistic way by others.

If the answer to one or more of these questions is "yes", circle -10.

If there is an indication of severe suspiciousness, but the person will not admit overt delusions, circle -3. If you cannot detect any delusions, circle 0.

Item 8 - Memory Loss

From your experience with this individual, consider whether he or she knows the following:

(a) Year and place of birth

(b) Year of marriage

(c) Year of arrival to this community (if applicable)

(d) Name of school attended

(e) Previous address

If you feel a person cannot answer 3 of these questions, but would remember date of birth and age, circle -3.

If you feel a person cannot answer any of the questions under Item 8--would he/she know the name of his/her doctor, social worker or volunteer in a club, ages and names of his/her children, and present addresses. If he/she would be unable to answer these questions, or answers very poorly, circle -20.

If he/she would be able to do well on all questions under Item 8, circle 0.

Item 9 - Energy and Drive

If a person is generally sad, apathetic and retarded in his/her actions, he/she is hypoactive and probably depressed. If he/she is restless, agitated and overtalkative, he/she is possibly manic. In both cases, circle -5.

Item 10 - Judgment

Measures "common sense" (the ability to make the right decisions, to dress appropriately, seek help when needed, to budget properly, etc.). If judgment seems intact, circle 0; if markedly impaired, circle -5.

Item 11 - Hallucinations

Most common are auditory. The person will hear a voice or voices when nobody is talking to him/her. Senile persons living alone may "hear" neighbors complaining about them accusing or vilifying them; a widow may "hear" her deceased husband talk to her. Visual hallucinations are very rare. Circle -10 if hallucinations are present.

JRB Associates, Inc.

Items 12-18 (Functional Abilities)

Nursing home respondents are scored on these items solely on physical and mental capabilities, while those not in nursing homes are scored on capability as well as existence of facilities. That is, if the nursing home respondent were living outside a nursing home, and had access to facilities, would these activities be within the person's capabilities? This interpretation is necessary because nursing homes are restrictive environments with policies that often negate functional abilities. As the desire is to be able to compare functional abilities among the sample groups, the restrictive environments must be held as equal as possible - with nursing home residents being considered as dwelling in the immediate surrounding community. The overriding criteria is that the person be capable of carrying out the activity without more than usual assistance needed by an adult.

Item 12 - Reads and Writes Well

Refers to the ability to correspond socially with friends and relatives, and also the ability to communicate with the written word as necessary. Thus, the person must be able to do so in English to receive credit (for this study). There is no difference in scoring for nursing home respondents or those not in nursing homes on this item.

Item 13 - Able to Use Telephone

Respondents not in nursing homes are given credit for this only if they have a telephone available and are physically or mentally capable of initiating phone calls. The rationale is that a telephone is often the only way of getting help in an emergency and is also a means of limited social contact and independence.

Item 14 - Able to Bank and Shop

This question is referring to physical ability to do banking and shopping. If the respondent is unable to do either task without the help of someone else, the respondent will not receive credit for this question.

Item 15 - Able to Prepare Simple Meals and Bake

This question refers to physical and mental factors along with the availability of cooking equipment. The meal must be something more than a T.V. dinner and has to be cooked. Remember that this question and all other questions on this instrument refer to "right now" ability.

Item 17 - Uses Public Transportation

This question refers to actual use of public transportation, not ability to use it.

Items 19-23 (Support from the Community)

Item 19 - Ethnic Compatibility

Respondents receive credit for this if they reside in a neighborhood where they are able to communicate and relate with their neighbors; i.e., there is no language barrier nor gross cultural difference.

Item 20 - Living Alone

If living alone, can get support and help from a relative, friend, neighbor or janitor, when needed.

If the support comes from a friend or relative, that person must be living in the same town. We are interested in availability factor here. If the support is from a janitor, he/she must live on the premises seven days a week. The person(s) should be able to be aware of change in the respondent's condition "daily", if needed. If the respondent fell, and could not reach the phone, would someone check on him/her?

Item 21 - Shopping

Able to shop at reliable grocer (willing to deliver when necessary). Here we are looking for a reliable grocer who is willing to deliver groceries for the client. We are not looking for the ability of the client to get out and shop.

Items 22-23 - Availability of Resources and Facilities

Credit is received for these if such facilities and services are available within the community for use by the respondent - whether the respondent utilizes them or not. Information sources include:

Nursing Home and Boarding Home
Administrators and Nurses

List from Montana Office on Aging.

Item 24 (Living Quarters)

Item 24 - Home Access

Respondents receive credit for this only if they can enter and exit their home without having to use stairs.

Items 25-27 (Relatives and Friends)

Items 25-27

Self explanatory, except that number 26 is also scored if the respondent is living with someone who is not able; i.e., if the person with whom the respondent lives could not render assistance in an emergency.

Items 31-44 (Supplemental Questions to the GFRS)

Item 33 - Residence

1. Coded for a single family dwelling, whether the respondent owns, rents, or shares it.

2. The unit must include cooking facilities, a bathroom and sleeping area. If such a unit is part of a facility which offers congregate meals, a centrally located staff person on duty, and possibly maid service and telephone "check up", it is coded as a Boarding Type Home (see number 3).

3. Some such facilities offer only rooms (with no cooking facilities); others offer full apartments with cooking facilities. Ultimate criteria are that congregate meals be available, and there regularly is a centrally located staff person on duty to render needed assistance. The differentiation between rooms and apartments will be the respondent's scored ability to "prepare simple meals and bake" (Item 15).

4. This is scored for licensed nursing home facilities.

Item 34 - Race

Response based on physical appearance, name, and Medicaid data. Respondent is asked directly if there remains doubt.

Item 35 - Income

This represents household income in instances where husband and wife are residing together. It is noted on the questionnaire that the coded income level is for two people. For statistical analysis, each person is given credit for one half the total scored amount.

Item 38 - Car Ownership/Usage

This item may reflect one reason for a respondent not using public transportation (Item 17) when this latter is available.

Item 40 - Coverage of Assistant/Home Care

This reflects the respondent's answers to the best of their knowledge. It does not necessarily reflect the actual stated coverage of the specific policy.

Item 41 - Placement

This question is concerned not with the current "reason" for nursing home residency, but the perceived reason - by the respondent - at the actual time of placement.

Item 42 - Financial Status (only if independence is indicated)

Financial independence

Means that the person's income is earned income, not money from friends, relatives, pensions or public sources. If the person is supported only by a pension and Social Security, he/she is not independent. If the person receives a pension, but also receives income from land, farming, substantial interest, or part-time employment, etc., and receives less than half support from public monies (including Social Security), etc., he/she is independent, if the public monies are not necessary for basic subsistence.

Stable

Means that the individual has a steady source of earned income (e.g., land, farm, etc.) that is for all practical purposes not likely to fluctuate drastically, nor liable to be used up. Living off savings which are concurrently dwindling does not classify as stable.

Face Sheet

Questionnaire #

__ Region Code 1-5,

__ __, County Code,

__ __ __, Sequence Number

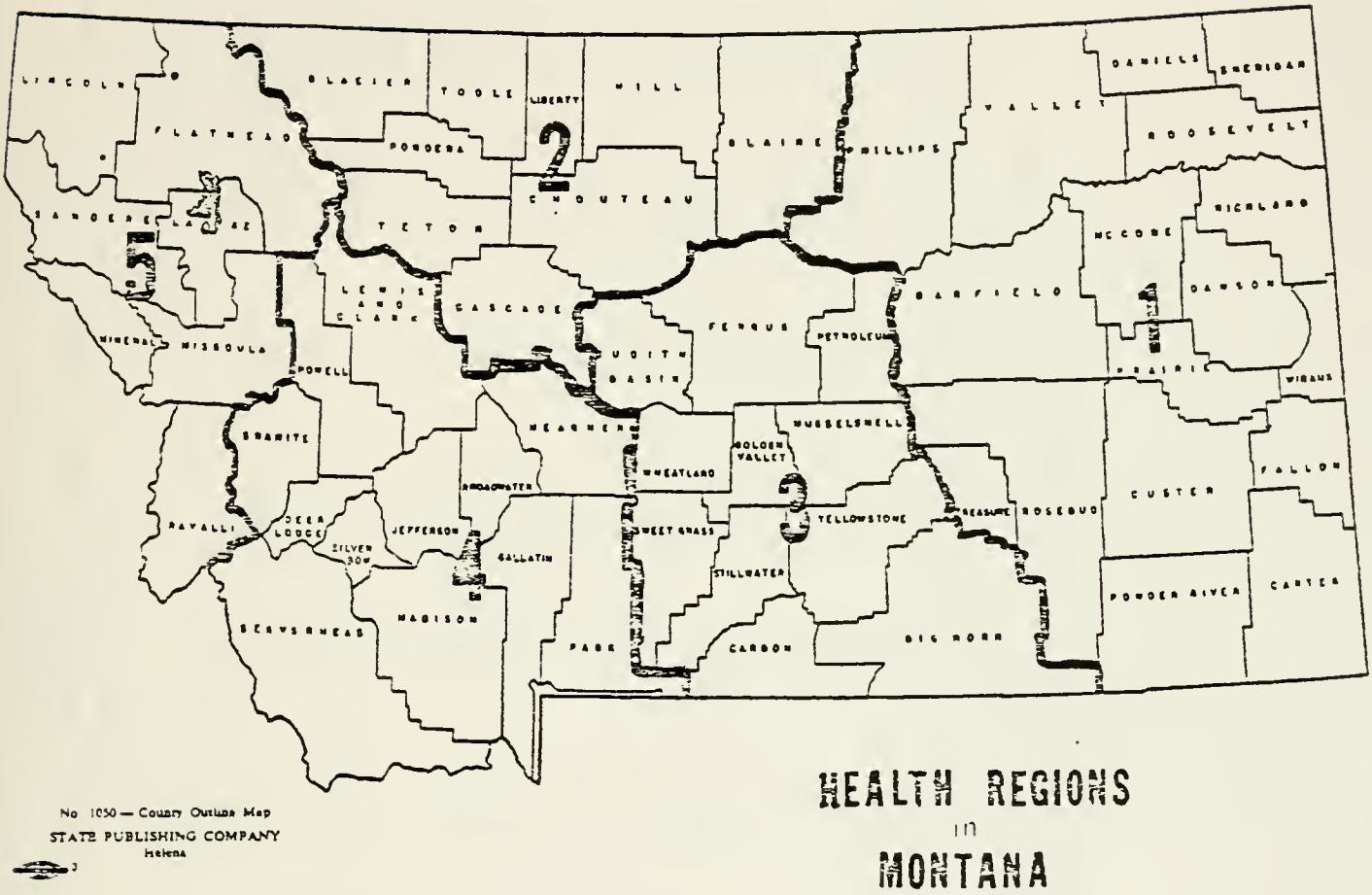
APPENDIX B

MAP AND POPULATION PROJECTIONS BY HEALTH PLANNING DISTRICTS STATE OF MONTANA

MAP AND POPULATION PROJECTIONS

BY HEALTH PLANNING DISTRICTS

STATE OF MONTANA



No 1050 — County Outline Map

STATE PUBLISHING COMPANY

Helena

HEALTH REGIONS

IN

MONTANA

1970 POPULATION
and
1975 & 1985 POPULATION PROJECTIONS BY AGE GROUP & COUNTY
EASTERN MONTANA (Region 1)

	TOTAL POPULATION			AGE 0 - 4		AGE 5 - 17		AGE 18 - 64		AGE 65 +	
COUNTY	1970	1975	1985	1975	1985	1975	1985	1975	1985	1975	1985
Carter	1,956	1,900	1,882	137	142	433	361	1,059	1,120	271	259
Custer	12,174	12,000	14,642	917	1,212	2,992	3,006	6,593	8,625	1,498	1,799
Daniels	3,083	3,100	3,143	214	259	729	600	1,699	1,808	458	476
Dawson	11,269	10,700	13,067	937	1,156	2,822	2,757	5,954	7,868	987	1,286
Fallon	4,050	4,000	4,326	342	390	1,049	915	2,206	2,549	403	472
Garfield	1,796	1,700	1,781	140	139	410	352	982	1,072	168	221
McCone	2,875	2,700	2,613	211	201	710	532	1,488	1,552	291	328
Phillips	5,386	5,400	5,757	435	471	1,417	1,243	2,830	3,302	718	741
Powder River	2,862	2,400	2,285	207	174	666	499	1,331	1,406	196	206
Prairie	1,752	1,900	1,915	123	140	408	352	1,077	1,092	292	331
Richland	9,837	9,900	12,093	797	998	2,596	2,585	5,407	7,094	1,110	1,416
Roosevelt	10,365	10,300	11,272	1,013	1,005	2,883	2,711	5,399	6,412	1 005	1,144
Rosebud	6,032	9,700	11,230	913	931	2,680	2,809	5,168	6,531	909	959
Sheridan	5,779	5,400	5,144	371	382	1,383	1,011	2,931	2,946	715	805
Treasure	1,069	1,200	1,236	94	105	318	272	653	721	135	138
Valley	11,471	13,200	16,325	1,160	1,391	3,700	3,935	7,297	9,858	1 043	1,141
Wibaux	1,465	1,500	1,538	121	135	386	319	806	892	187	192
TOTALS	91,221	97,000	110,252	8,162	9,231	25,582	24,259	52,880	64,848	10,386	11,914

SOURCE: Montana Population Projections 1975 - 2000, Division of Research & Information Systems, Montana Department of Community Affairs, August, 1977. (Medium Series)

1970 POPULATION
and
1975 & 1985 POPULATION PROJECTIONS BY AGE GROUP & COUNTY
NORTH CENTRAL MONTANA (Region 11)

	TOTAL POPULATION			AGE 0 - 4		AGE 5 - 17		AGE 18 - 64		AGE 65 +	
COUNTY	1970	1975	1985	1975	1985	1975	1985	1975	1985	1975	1985
Blaine	6,727	6,800	7,191	617	631	1,827	1,639	3,603	4,191	753	730
Cascade	81,804	83,900	88,274	7,668	8,195	21,061	19,503	47,921	52,875	7,250	7,701
Choteau	6,473	6,300	6,491	496	551	1,540	1,314	3,503	3,845	761	781
Glacier	10,783	11,100	11,961	1,188	1,041	3,361	3,142	5,635	6,631	916	1,147
Hill	17,358	17,900	19,641	1,552	1,694	4,392	4,046	10,389	11,960	1,567	1,941
Liberty	2,359	2,500	2,697	190	228	671	562	1,421	1,636	218	271
Pondera	6,611	6,900	7,462	583	647	1,868	1,673	3,718	4,329	731	813
Teton	6,116	6,500	7,875	458	610	1,659	1,710	3,582	4,621	801	934
Toole	5,839	5,400	5,174	398	412	1,416	1,079	2,994	3,048	592	635
TOTALS	144,070	147,300	156,766	13,150	14,009	37,795	34,668	82,766	93,136	13,589	14,953

SOURCE: Montana Population Projections 1975 - 2000, Division of Research & Information Systems, Montana Department of Community Affairs, August, 1977. (Medium Series)

1970 POPULATION
and
1975 & 1985 POPULATION PROJECTIONS BY AGE GROUP & COUNTY
SOUTH CENTRAL MONTANA (Region III)

	TOTAL POPULATION			AGE 0 - 4		AGE 5 - 17		AGE 18 - 64		AGE 65 +	
COUNTY	1970	1975	1985	1975	1985	1975	1985	1975	1985	1975	1985
Big Horn	10,057	10,900	12,161	1,221	1,655	3,138	3,162	5,780	7,053	761	891
Carbon	7,080	7,800	8,889	495	672	1,734	1,796	4,213	5,010	1,358	1,411
Fergus	12,611	13,000	13,617	927	1,040	3,232	2,705	6,892	7,811	1,949	2,061
Golden Valley	931	900	917	59	70	188	160	510	534	143	154
Judith Basin	2,667	2,700	2,745	193	233	646	531	1,445	1,530	416	451
Musselshell	4,734	4,200	4,796	297	373	963	1,003	2,292	2,761	648	654
Petroleum	675	700	678	48	50	178	144	425	435	49	49
Stillwater	4,632	5,200	6,090	351	472	1,231	1,290	2,874	3,533	744	795
Sweet Grass	2,980	3,000	2,897	210	221	630	540	1,628	1,657	532	479
Wheatland	2,529	2,400	1,923	165	126	557	347	1,309	1,096	469	354
Yellowstone	87,467	97,000	126,106	7,936	10,456	24,983	28,134	56,961	76,914	8,020	10,602
TOTALS	139,263	148,100	180,819	11,902	14,768	36,880	39,817	84,329	108,334	14,989	17,900

SOURCE: Montana Population Projections 1975 - 2000, Division of Research & Information Systems, Montana Department of Community Affairs, August, 1977. (Regions Series)

1970 POPULATION
and
1975 & 1985 POPULATION PROJECTIONS BY AGE GROUP & COUNTY
SOUTHWESTERN MONTANA (Region IV)

	TOTAL POPULATION			AGE 0 - 4		AGE 5 - 17		AGE 18 - 64		AGE 65 +	
COUNTY	1970	1975	1985	1975	1985	1975	1985	1975	1985	1975	1985
Beaverhead	8,187	8,300	9,095	699	868	1,849	1,798	4,862	5,485	890	944
Broadwater	2,526	2,800	3,428	206	287	732	771	1,524	2,002	338	368
Deer Lodge	15,652	15,200	15,482	1,144	1,245	3,482	2,991	8,630	9,071	1,944	2,175
Gallatin	32,505	37,300	44,058	2,851	3,527	7,128	7,342	24,304	29,510	3,017	3,679
Granite	2,737	2,700	2,801	206	236	638	564	1,528	1,600	328	401
Jefferson	5,238	6,700	8,169	539	684	1,724	1,869	3,844	4,948	593	668
Lewis & Clark	33,281	36,900	46,931	3,008	3,865	9,247	10,526	21,020	28,090	3,625	4,450
Madison	5,014	5,800	5,556	396	422	1,367	1,072	3,163	3,223	874	819
Meagher	2,122	2,300	2,216	174	173	527	429	1,327	1,326	272	288
Park	11,197	12,100	14,590	839	1,143	2,778	3,088	6,768	8,472	1,715	1,887
Powell	6,660	7,500	9,015	568	729	1,865	1,983	4,373	5,571	694	732
Silver Bow	41,981	43,000	44,457	3,422	3,581	10,618	9,335	23,847	26,555	5,113	4,986
TOTALS	167,100	180,600	205,798	14,052	16,760	41,955	41,768	105,190	125,053	19,403	21,417

SOURCE: Montana Population Projections 1975 - 2000 Division of Research & Information Systems, Montana Department of Community Affairs, August, 1977. (Medium Series)

1970 POPULATION
and
1975 & 1985 POPULATION PROJECTIONS BY AGE GROUP & COUNTY
NORTHWESTERN MONTANA (Region V)

	TOTAL POPULATION			AGE 0 - 4		AGE 5 - 17		AGE 18 - 64		AGE 65 +	
COUNTY	1970	1975	1985	1975	1985	1975	1985	1975	1985	1975	1985
Flathead	39,460	44,600	56,402	3,611	4,679	11,754	12,791	24,640	33,309	4,595	5,623
Lake	11,445	17,100	19,876	1,425	1,603	4,434	4,551	8,906	11,210	2,135	2,512
Lincoln	18,063	16,500	16,589	1,433	1,285	4,587	3,634	9,334	10,108	1,146	1,562
Mineral	2,958	3,500	4,325	295	373	972	1,036	1,967	2,610	266	306
Missoula	58,263	64,600	78,171	5,106	6,240	14,117	14,404	40,199	51,370	4,978	6,157
Ravalli	14,409	18,400	21,142	1,321	1,630	4,532	4,483	9,728	11,886	2,828	3,143
Sanders	7,093	8,100	9,588	615	750	2,061	2,141	4,350	5,539	1,074	1,158
TOTALS	154,691	172,800	206,093	13,806	16,560	42,648	43,040	99,124	126,032	17,222	20,461

SOURCE: Montana Population Projections 1975 - 2000, Division of Research & Information Systems, Montana Department of Community Affairs, August, 1977. (Medium Series)

APPENDIX C

A GERIATRIC FUNCTIONAL RATING SCALE TO DETERMINE THE NEED FOR INSTITUTIONAL CARE

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A Geriatric Functional Rating Scale to Determine the Need for Institutional Care

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Montreal and Ottawa, Canada

ABSTRACT: This study was carried out to validate a rating scale which could serve as a guide in determining the need for institutional care. The scale assesses the subject's physical and mental disability, balanced against his ability to function and the support available from relatives and community resources. Cut-off points were tested by the use of an 18-month follow-up interval. Initially, 130 aged men and women from three different settings were rated. At the time of follow-up eighteen months later, 83 per cent of the subjects who had obtained an initial score indicative of their inability to function in the community were either dead or in an institution. In contrast, 90 per cent of those who obtained an initial score indicating that they were able to continue in the community, were not in an institution at the time of follow-up. The rating scale can be used not only to help decide the need for institutional care, but also to help determine the most suitable setting for the patient if placement is necessary.

This study is an attempt to demonstrate and validate a functional rating scale which could serve as a practical guide to determine the need for institutional care of aged persons in an urban setting.

At present, 7 per cent of our geriatric population in Canada is living in old people's homes, nursing homes and mental hospitals. It is well known that premature admission to an institution often results in severe regression with accompanying depression and loss of physical and mental functioning. Nevertheless, if admission is unrealistically delayed the patient may have a great deal of difficulty adapting to the institutional setting, which in turn causes increased morbidity and mortality. Goldfarb (1), in his studies of predicted mortality, showed that the relatively healthy aged live longer in settings which contribute to personal comfort, pleasure and maintenance of dignity. The question of placement is often further complicated by the decision of where, or in which setting to institutionalize. The setting is often dictated by the resources available in a community rather than by the needs of the patient. Recently, however, the available facilities have increased so that in certain communities there is now a limited choice. Admission to an institution may be prompted by a life crisis and by pressure from relatives, the patient's physician or police officers. The decision to place a patient is often left in the hands of inexperienced professionals. However, Blenkner (2) found that, even if trained professionals are employed, institutional placement and morbidity occur sooner and more frequently in a group receiving "professional social work services" than in a matched group receiving few or no social services. The explanation could be that even an experienced professional sometimes is influenced by emotional bias to institutionalize patients prematurely.

Thus it appeared that a rating scale could serve as a practical guide for determining more accu-

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rately and objectively the proper need for placement, and also aid in the choice of the appropriate institutional setting.

Our rating scale was structured in the Day Hospital of Maimonides Hospital and Home for the Aged in Montreal. The primary purpose of the Day Hospital is to support patients as long as possible in the community in an attempt to avoid admission as inpatients. The multidisciplinary approach and experience helped in the development of the rating scale.

We first attempted to rate the patient's degree of physical and emotional well-being. There is, however, no single index for measuring a person's health. "Health anxiety" can cause severe discrepancies between subject and doctor assessments. This difficult type of rating can be done accurately only by a medically trained professional. Nevertheless, many rating scales which measure physical and emotional disability have been developed and used in geriatrics (3, 4). Yet there is always the problem of weighing a disability in one area against ability in another area, e.g., blindness against the ability to walk. Rating the ability to care for oneself has therefore been accepted as the best way to assess physical and mental functioning in the elderly. Katz et al (5), Lowenthal (6) and Lawton and Brody (7) developed ADL (activities of daily living) scales which are widely used to assess the ability of individuals to look after themselves or to rate their degree of independence. Other factors, however, also play a role in maintaining an aged person in the community.

The rating scale which we developed combines the assessment of physical and mental disability with the assessment of ability to function. It also takes into account such factors as support from relatives and friends, the patient's financial situation and living arrangements, and the availability of various community resources (e.g., recreational facilities and Meals-on-Wheels services). In this fashion, we are able to make a global assessment of a person's ability to maintain himself in the community.

Physical and mental disability are given minus values; the ability to function and the support measures are given plus values. A "final score" consisting of the sum of the minus and plus scores is obtained for each person rated. The accompanying Chart shows the rating scale. The information sheet for raters can be obtained on request.

In order to validate our rating scale and to establish the various cut-off points, we undertook a small pilot study of three different groups: 1) members of the Golden Age Association in Montreal, 2) patients applying for admission or being treated in the Day Hospital at Maimonides Hospital and Home for the Aged, and 3) patients evaluated for help or possible institutional admission by the Geriatric Service of the Royal Ottawa Hospital in Ottawa, Ontario. These three groups would naturally show an increasing degree of disability and inability to function in their respective communities. The initial ratings were carried out respectively by volunteer social work students, by a nurse and social worker in the Day Hospital, and by a visiting nurse. An information sheet or guide was supplied for the use of the raters in order to standardize the results. After a time interval, we undertook a follow-up study. Only patients successfully followed are included in this report. The approximate time lapse between the rating date and follow-up date was eighteen months.

RESULTS

Table 1 shows the demographic data and average ratings for the three groups. As could be predicted on the basis of the composition of the groups, the average score was highest for the Golden Age Association members and lowest for the Ottawa patients.

At the onset of the study we established three categories based on the degree of independence or ability to continue outside an institutional setting, as indicated by the rating score. The raters were not aware of these categories:

1. Persons with a score above 40 would be those who were able to live in their own home setting; they did not need to enter an institution.
2. A score between 20 and 40 indicated that the person required some supportive care but not placement in a nursing home. He or she could probably function in a supervised

TABLE 1
Demographic Data and Average Ratings for the 3 Groups of Subjects

Group	No. of Subjects	Sex		Avge. Age (yrs.)	Avge Rating Score
		Male	Female		
Golden Age	49	16	33	74	72
Day Hospital	35	15	20	71	55
Ottawa	46	18	28	72	2
Totals	130	49	81		

GERIATRIC FUNCTIONAL RATING SCALE

NAME _____ Date of Birth _____

ADDRESS _____ Tel. No. _____

Sex: M F Marital Status: Si M W D S Rel: H P C O

Relative or Friend:

Name _____

Address _____ Tel. No. _____

1/ PHYSICAL CONDITION		Score		Score		Score
A) Eyesight	Good Watches TV Reads Needlework	0	Distinguishes Faces	-3	Sees Light only	-10
B) Hearing	Good	0	Loud Voice	-3	Deaf	- 5
C) Mobility	Fully Mobile - Dresses Carries Parcels Rides Bus	0	Uses Cane or should use one Dependent on railings	-3	Requires Cane & other support - Wheelchair	-15
D) Pulmo-Cardio-Vascular Function	No Restrictions	0	1 Flight of Stairs 1 City Block	-3	Partly or totally Bedridden	-20
E) Diet	No Restrictions	0			Yes	- 3
2/ MENTAL CONDITION		**Score**		**Score**		**Score**
A) Disorientation	None	0	Time	-3	Person &/or Place	-15
B) Delusions	None	0	Mild - Severe Suspiciousness	-3	Overt	-10
C) Memory Loss	None	0	Benign	-3	Malignant	-20
D) Energy & Drive	Normal	0			Hypoactive or Hyperactive	- 5
E) Judgment	Intact	0			Impaired	- 5
F) Hallucinations	None	0			Auditory &/or Visual	-10

boarding home, an institution providing domiciliary care (e.g., a veterans' lodge), an apartment hotel, or even an apartment project for senior citizens with built-in support measures. A day care program could also be used to provide additional support for the patient and his family while the patient lived in a protective setting or in the community. Some patients were rated while attending a day hospital.

3. A score under 20 indicated that the patient required care in a nursing home or chronic disease hospital, or placement in a psychiatric facility when his or her psychiatric condition made management in other settings impossible.

3/ FUNCTIONAL ABILITIES		Score
A)	Reads and writes letters	+ 2
B)	Able to use telephone	+ 5
C)	Able to bank and shop	+ 5
D)	Able to prepare simple meals and bake	+ 7
E)	Washes, dresses and toilets self without assistance	+ 5
F)	Uses public transportation	+ 7
G)	Able or would be able to take own medication and follow diet	+ 10

4/ SUPPORT FROM THE COMMUNITY		Score
A)	Ethnic compatibility	+ 2
B)	If living alone, can get support and help from a reliable relative, friend, neighbour, janitor	+ 10
C)	Able to shop at reliable grocer's (willing to deliver when necessary)	+ 5
D)	Available supportive and recreational facilities - Clubs geared to aged	+ 2
	- Church, synagogue	+ 1
	- Library	+ 1
	- Park, shopping center, restaurant, movies	+ 1
E)	Geographic availability of - Public health nurses	+ 2
	- Meals-on-Wheels service	+ 2
	- Homemaker services	+ 2
	- Friendly visitor	+ 2
	- Hospital with emergency and clinic facilities	+ 2
	- Public transportation	+ 2

5/ LIVING QUARTERS		Score
	Elevator service or living on ground floor or basement	+ 3

6/ RELATIVES AND FRIENDS		Score
A)	Not married but lives with compatible and helpful relative or friend	+ 5
B)	Lives with incompatible relative, friend or spouse	0
C)	Lives with able and compatible spouse	+ 10

7/ FINANCIAL SITUATION		Score
A)	Totally independent	+ 5
B)	Dependent on helpful relative	+ 3
C)	Dependent mainly on Old Age Pension &/or other comm.resources	0

Total Plus Score _____

Total Minus Score _____

Final Score _____

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Table 2 shows an analysis according to the score obtained on the test and the outcome after an 18-month follow-up. Of the 36 patients who obtained a score below 19, 30 or 83 per cent were in an institution or dead at the time of follow-up. Nine of the 14 deceased patients had a score below 19. The low scores of these debilitated patients are further proof of the validity of our rating scale. Of the 77 aged whose score was above 40, 69 or 90 per cent were living in the community after an 18-month time lapse.

The validity of the scale is less accurate when assessing the need for a protective setting. Of 17 subjects with an initial 20–39 score, 7 were living in a "protective setting" on follow-up.

On reviewing the cases that did not fit into the predicted categories, one realizes that the onset of a sudden physical illness makes prediction impos-

TABLE 2
Follow-up in Relation to Predicted Outcome, 18 Months after Initial Rating

Initial Scores	Living in Community	Living in Protective Setting	In Institution	Deceased	Total
Under 19	5	1	21	9	36
20–39	5	7	2	3	17
40+	69	2	4	2	77
Totals	79	10	27	14	130

sible. Three patients who had scores over 40 were in an institution at the time of follow-up because of a cerebrovascular accident. This could not be predicted on the initial rating.

In 3 other cases in which the scores were below 19, financial resources or an able spouse delayed institutional admission. In another case, ample financial means prompted premature admission to an institution to insure the "comfort" of the patient.

COMMENT

This study demonstrates the use of a rating scale to determine the need for institutional admission. Initially, 130 subjects were rated. After an 18-month interval, the predictions made at the time of the initial rating held up well in many instances. The follow-up study has already prompted certain revisions in the rating scale which we hope will increase the accuracy of our predictions.

Our experience indicates that a rating scale can be a very useful instrument to help in deciding the need for admission to an institution and in determining the most suitable setting for the patient if placement is necessary.

Acknowledgments

The authors gratefully acknowledge the assistance of Mrs. Florence Kirshner, Golden Age Association of Montreal, and of Dr. Stanley Goldstein, Royal Ottawa Hospital, Ottawa.

REFERENCES

1. Goldfarb AI: Predicting mortality in the institutionalized aged. Arch Gen Psychiat 21: 172, 1969.
2. Blenkner M: 8th International Congress of Gerontology, Washington, DC, 1969. Proceedings V:I. Abstracts of Symposium and Lectures, p 417. (Fed. Am. Soc. Exper. Biol., Bethesda, MD.)
3. Maddox G: Self assessment of health status. J Chron Dis 17: 449, 1964.
4. Wyler AR, Masuda M and Holmes TH: Seriousness of illness rating scale. J Psychsom Res 11: 363, 1968.
5. Katz S, Downs TD, Cash HR et al: Progress in development of the Index of ADL. Gerontologist 10:20, 1970 (Part 1).
6. Lowenthal MF: Lives in Distress. New York, Basic Books, 1964.
7. Lawton MP and Brody E: Assessment of older people: self-maintaining instrumental activities of daily living. Gerontologist 9: 179, 1969.